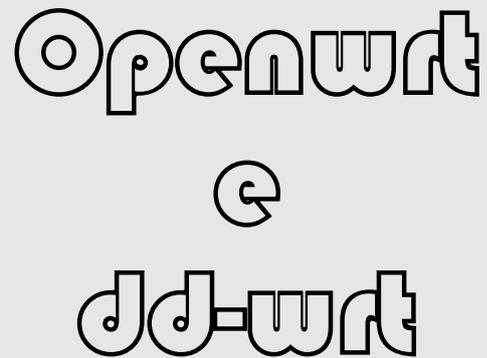


Alternative open e free
a Cisco IOS



<https://openwrt.org/>

- **OpenWrt** è una distribuzione Linux specifica per dispositivi embedded come router CPE, Smartphone pocket computer, o microcontrollori.
- The **OpenWrt Project** is a Linux operating system targeting embedded devices. Instead of trying to create a single, static firmware, OpenWrt provides a fully writable filesystem with **package management**. This frees you from the application selection and configuration provided by the vendor and allows you to customize the device through the use of packages to suit any application. For developers, OpenWrt is the framework to build an application without having to build a complete firmware around it; for users this means the ability for full customization, to use the device in ways never envisioned.
- As of January 2018, both the OpenWrt and **LEDE** projects agreed to re-merge back under the OpenWrt name.

OPENWRT - <https://openwrt.org/>



Dispositivi supportati



ToH – Table of Hardware

https://openwrt.org/supported_devices



<https://dd-wrt.com/>

- **DD-WRT** è un firmware libero in grado di supportare decine di router Wi-Fi differenti. È distribuito sotto licenza GNU GPL v2.
- Le versioni di DD-WRT fino alla v22 sono basate sul firmware Alchemy della Sveasoft, che a sua volta è basato sul firmware Linksys originale. Dalla versione v23 il firmware è stato in gran parte riscritto. Dopo la v24 esistono soltanto versioni beta. <ftp://ftp.dd-wrt.com/>
- Il firmware implementa diverse funzioni non gestite dalla versione originale, tra le quali: WDS, IPv6, QOS avanzato, RADIUS, controllo della potenza radio, possibilità di overclocking, routing statico, gestione di reti VPN.
- Implementa, oltre all'obsoleto (e insicuro) telnet, anche ssh, proftpd, samba e dnsmasq.
- Esiste un forum e wiki di supporto.
- Tramite un fork di openwrt e tramite ipkg/opkg è possibile avere un package manager.

DD-WRT - <https://dd-wrt.com/>

- DD-WRT is a Linux based **alternative OpenSource firmware** suitable for a great variety of **WLAN routers** and **embedded systems**. The main emphasis lies on providing the easiest possible handling while at the same time supporting a great number of functionalities within the framework of the respective hardware platform used.
- No MODEM (con alcune eccezioni)
- Sebastian Gottschall aka **BrainSlayer**

*One cigarette costs 2 minutes of your life.
One bottle of beer costs 4 minutes of your life.
One working day costs 8 hours of your life.*



ToC – Table of Compatibility

https://wiki.dd-wrt.com/wiki/index.php/Supported_Devices

Aggiornamento Firmware

Avoid Another *brick* in the wall

- Alcuni Wireless Router sono venduti con già preinstallato il firmware OpenWRT o DD-WRT, altri possono essere aggiornati successivamente.
- Le procedure di aggiornamento sono diverse dipendendo dal particolare dispositivo e dalla particolare revisione dello stesso.
- Tutte le procedure di upgrade sono molto delicate ed il rischio di rendere il dispositivo un **mattone** (brick) è dietro l'angolo.



OPENWRT e DD-WRT... Linux



Seriale / JTAG (a volte occorre utilizzare il saldatore)



Telnet



SSH



GUI (Interfaccia Web Based – HTTP/HTTPS)



A seconda della combinazione **RAM** - Spazio **FLASH** avremo la possibilità di installare diversi programmi e quindi servizi.



A seconda dei **CHIPSET** utilizzati nei vari dispositivi è possibile attivare o meno delle funzionalità avanzate.

DD-WRT e Cisco

- Linksys/Cisco WRT54G(S)

Linksys è un'azienda produttrice di apparecchiature informatiche destinate all'utilizzo in reti casalinghe o di piccole aziende. È stata acquisita nel 2003 dalla statunitense **Cisco Systems** e rivenduta nel 2013 alla **Belkin**, attuale proprietaria. Fu una tra le prime aziende costruttrici ad adottare lo standard wireless 802.11g. Tra i suoi prodotti principali vi sono router wireless e broadband oltre ad apparecchiature per il VoIP.



Netgear R7000 (openwrt e DD-wrt)

<https://www.netgear.it/home/products/networking/wifi-routers/r7000.aspx>

- Dual band Gigabit 802.11ac
- WiFi AC1900 (600 + 1300 Mbps)
- Dual band simultaneo 2,4 GHz e 5 GHz
- Cinque (5) porte Gigabit Ethernet da 10/100/1000 Mbps (1 WAN e 4 LAN)
- Due (2) porte USB: una (1) porta USB 3.0 e una (1) porta USB 2.0
- WiFi AC1900 - 600+1300 Mbps velocità
- Processore dual core 1 GHz
- Dual core a 1 GHz
- 128 MB di memoria Flash e 256 MB di RAM



GL-mt300n-v2 (openwrt)

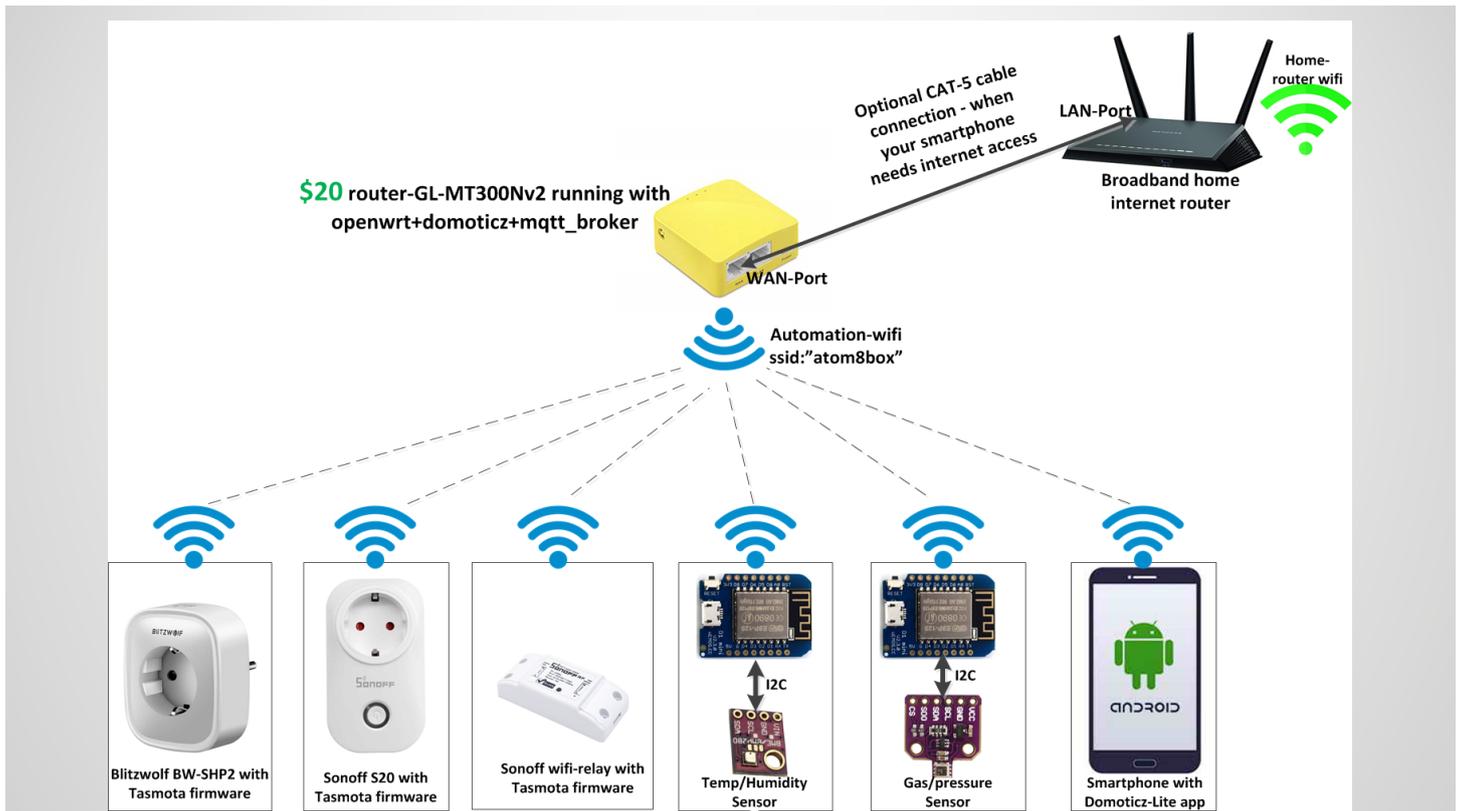
<https://www.gl-inet.com/products/gl-mt300n-v2/>

- Powered by MTK 7628NN 580Mhz SoC
- 300Mbps high speed
- Small, light, easy to use
- OpenWrt pre-installed
- Increased RAM from 64MB to 128 MB
- Better Wi-Fi with MTK driver
- Faster OpenVPN encryption
- 4 GPIOs for more DIY funs
- 1 WAN port - 1 LAN port - 2 USB ports (1 micro for power)



GL-AR150 supporta anche DD-WRT

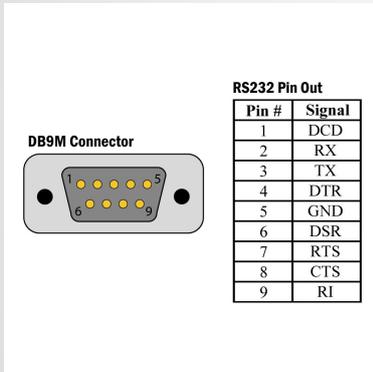
<https://it.aliexpress.com/item/32570514723.html>
<https://www.amazon.it/dp/B073TSK26W>



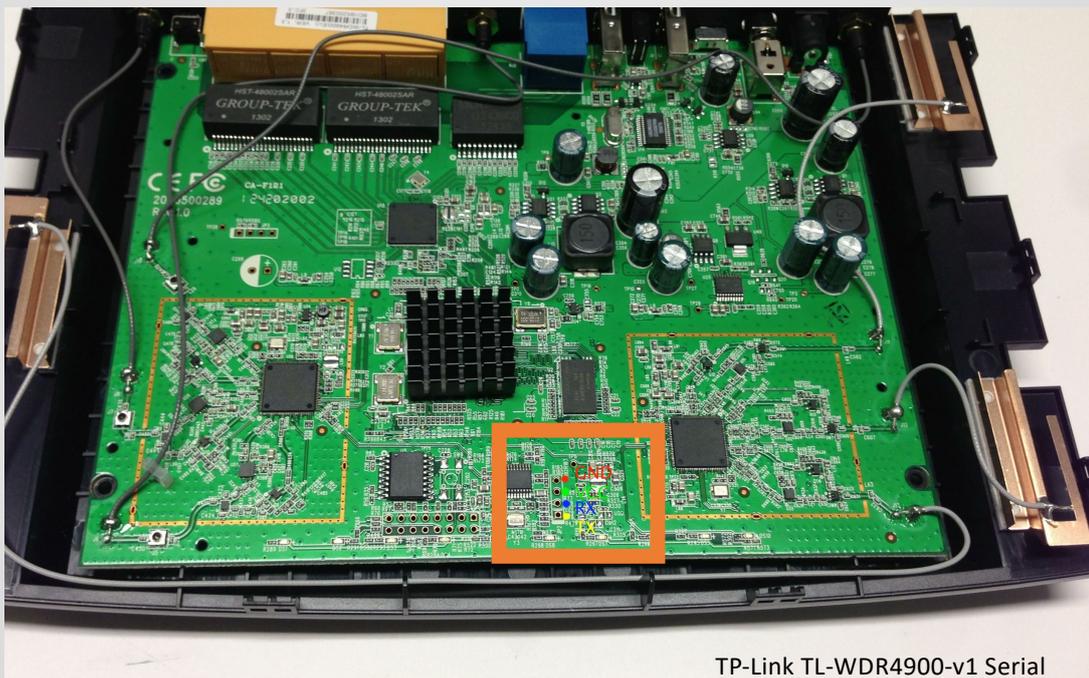
LOCALE (OPENWRT): CONSOLE,
SSH E WEB (PROPRIETARIA E LUCI)
REMOTO (DD-RT): SSH E WEB

Dispositivamente

SERIALE: CONNETTORI, CAVI E CONVERTITORI USB -> SERIALE



SERIALE



TP-Link TL-WDR4900-v1 Serial

SERIALE

TP-Link TL-WDR4900-v1



```
U-Boot 2010.12-svn15934 (Dec 11 2012 - 16:23:49)
CPU: P1014, Version: 1.0, (0x80f10110)
Core: E500, Version: 5.1, (0x80212151)
Clock Configuration:
  CPU0:800 MHz,
  CCB:400 MHz,
  DDR:333.333 MHz (666.667 MT/s data rate) (Asynchronous), IFC:100 MHz
L1: D-cache 32 kB enabled
  I-cache 32 kB enabled
Board: P1014RDB
SPI: ready
DRAM: 128 MiB
L2: 256 kB enabled
Using default environment
PCIe1: Root Complex of mini PCIe Slot, x1, regs @ 0xffe0a000
  01:00.0 - 168c:abcd - Network controller
PCIe1: Bus 00 - 01
PCIe2: Root Complex of PCIe Slot, x1, regs @ 0xffe09000
  03:00.0 - 168c:0033 - Network controller
PCIe2: Bus 02 - 03
In: serial
Out: serial
Err: serial
Net: initialization for Atheros AR8327/AR8328
AR8327/AR8328 v1.1 is found!
eTSEC1
Autobooting in 1 seconds
```

SSH

GL.iNet GL-AR300M

```
root@192.168.8.1's password:

BusyBox v1.28.3 () built-in shell (ash)

-----
|_ WIRELESS FREEDOM
-----

OpenWrt 18.06.1, r7258-5eb055306f

root@GL-AR300M:~#
```

WEB GUI SEMPLICE (PROPRIETARIA)

GL.iNet GL-AR300M

GL.iNet ADMIN PANEL

Riavvio Disconnetti Italiano

INTERNET

WIRELESS

CLIENTE

AGGIORNAMENTO

FIREWALL

VPN

APPLICAZIONI

PIÙ IMPOSTAZIONE

Cavo

Ripetitore

Tethering

3G/4G modem

ZeroZeroZero

WLAN clienti

LAN cliente

Cavo

Nessun cavo rilevato nella WAN. Si prega di collegare un cavo Internet.

Usare come LAN

Ripetitore

il ripetitore è disabilitato/ non configurato. **Inizia**

3G/4G modem

Nessun dispositivo modem trovato. Inserire il tuo USB

Tethering

Nessun dispositivo Tethering trovato. Inserire il tuo cellulare o null

WEB GUI AVANZATA (OPENWRT POWERED BY LUCI)

GL-AR300M Status System Network Logout

AUTO REFRESH ON

Status

System

Hostname	GL-AR300M
Model	GL.iNet GL-AR300M
Architecture	Qualcomm Atheros QCA9533 ver 2 rev 0
Firmware Version	OpenWrt 18.06.1 r7258-5eb055306f / Luci openwrt-18.06 branch (git-18.196.56128-9112198)
Kernel Version	4.9.120
Local Time	Mon Feb 17 21:10:52 2020
Uptime	1d 6h 59m 35s
Load Average	1.28, 0.91, 0.65

Memory

Total Available	76784 kB / 124672 kB (61%)
Free	68660 kB / 124672 kB (55%)
Buffered	8124 kB / 124672 kB (6%)

<https://github.com/openwrt/luci>

GL.iNet GL-AR300M

WEB GUI AVANZATA (DD-WRT)

Netgear R7000

The screenshot displays the DD-WRT control panel for a Netgear R7000 router. The interface is in Italian and shows the 'WAN Setup' configuration page. The 'WAN Connection Type' is set to 'Static IP'. The WAN IP Address is 192.168.1.2, Subnet Mask is 255.255.255.0, and Gateway is 192.168.1.1. There are three Static DNS entries: 208.67.220.220, 208.67.222.222, and 8.8.8.8. Under 'Optional Settings', the Router Name and Hostname are both set to 'test'. The MTU is set to 'Auto' with a value of 1500. Both 'Shortcut Forwarding Engine' and 'STP' are set to 'Disable'. On the right side, there is a 'Help' section with a 'more...' link, containing information about DHCP, Hostname, Domain Name, Local IP Address, Subnet Mask, DHCP Server, Start IP Address, and Maximum DHCP Users.

dd-wrt.com ... control panel

Firmware: DD-WRT v3.0-r40270M kongac (07/11/19)
Time: 22:13:36 up 37 days, 4:21, load average: 0.03, 0.05, 0.00
WAN IP: 192.168.1.2

Setup | Wireless | Services | Security | Access Restrictions | NAT / QoS | Administration | Status

Basic Setup | **IPV6** | DDNS | MAC Address Clone | Advanced Routing | Switch Config | Networking | Tunnels

WAN Setup

WAN Connection Type

Connection Type: Static IP

WAN IP Address: 192.168.1.2

Subnet Mask: 255.255.255.0

Gateway: 192.168.1.1

Static DNS 1: 208.67.220.220

Static DNS 2: 208.67.222.222

Static DNS 3: 8.8.8.8

Optional Settings

Router Name: test

Hostname: test

Domain Name:

MTU: Auto (1500)

Shortcut Forwarding Engine: Enable Disable

STP: Enable Disable

Help more...

Automatic Configuration - DHCP:
This setting is most commonly used by cable operators.

Hostname:
Enter the hostname provided by your ISP.

Domain Name:
Enter the domain name provided by your ISP.

Local IP Address:
This is the LAN-side IP address of the router.

Subnet Mask:
This is the subnet mask of the router.

DHCP Server:
Allows the router to manage your IP addresses.

Start IP Address:
The address you would like to start with.

Maximum DHCP Users:
You may limit the number of addresses your router hands out. 0 means only predefined static leases will be handed out.

DOMANDE



The End

SANTO STRATI

